

ABSTRACT

In this application we describe a solution to the following problem. Consider publicly accessible shared machines such as washers and dryers in a public Laundromat or in a laundry room in an apartment building shared by the tenants of the building. The machines have the property that they are (1) publicly accessible by a large number of users and (2) while in use it is desirable that they should be only accessible by the user who started the machine. That is to say, the user who starts the machine wants to have its content protected from other users for the duration of the machine normal operation.

Currently, the protection consists of the user sitting in the Laundromat and waiting for the machine to complete its operation (for example the wash or dry).

We propose a mechanism that can be installed on such publicly accessible machine. The mechanism uses the smart card technology to lock the instrumented machine using a session key. A session key is a long string of bytes. Typical length might be between 64 bytes to 512 bytes. This number of bytes should become larger as the computational power of computers increases. So, for example, ten years from now, the number of bytes maybe need be 10k bytes.

At the start of the machine operation, the user uses his/her smart card to lock the machine. At the end of the machine operation, the user uses his smart card to unlock the machine.

During the locking operation, the user will insert the smart card into the card acceptance device. This will start the operation of the logic decision circuit, which will generate a session key. The logic decision circuit will keep one copy of the session key, which will be stored in the instrumented machine, and the other copy of the session key will be stored in the smart card persistent memory.

For the unlocking operation, the user will insert the smart card into the card acceptance device and the logic circuit will read the smart card's session key. The logic circuit will perform compare operation of the session key in its persistent memory and the session key read from the smart card. If the keys match, then the logic circuit will unlock the instrumented machine.